UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/837,387	04/19/2001	Juan G. Gonzalez	2925-0495P	7292

30594 7590 09/07/2004		EXAMINER
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ART UNIT	PAPER NUMBER
2634	

DATE MAILED: 09/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO 90C (Rev 10/03)

	Application No.	Applicant(s)
Office Action Summary	09/837,387	GONZALEZ ET AL.
	Examiner	Art Unit	
	Kevin Y Kim	2634	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 April 2001*.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-13* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,5 and 9-12* is/are rejected.

7)☒ Claim(s) *4,6-8 and 13* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *25 June 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date *4/19/01*.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2.   Claims 1-3,5,9-12 are rejected under 35 U.S.C. 102(e) as being anticipated by Piirainen

(US 6,748,031).

Consider claims 1 and 2.   Referring to Fig.2, Piirainen discloses a method of estimating a

communication channel, comprising;

"determining at least first and second confidence levels that a transmitted

data symbol has respective first and second values based on a received data

symbol corresponding to the transmitted data symbol," see col. 3, line 66 ~ col.4, line4

describing the confidence levels or probabilities of a received symbol y having one of a plurality

of values x, and

"generating a channel estimate based on the first and second confidence

levels." See col.4, lines 32-49 describing the calculation of a channel estimate using the

probabilities of a received symbol y having one of a plurality of values x.

Regarding claim 3, the calculation of a channel estimate is based on the confidence levels

of the received symbols since it used the mean of the probabilities/confidence levels as well as

the received data symbol y_k. See the equation at col.4, lines 35-40.

Next, claim 5 is considered. Referring to Fig.2, Piirainen discloses a method of making

a channel estimate, comprising:

"generating a confidence factor according to a confidence function and a

received data symbol, the confidence factor representing a confidence level that a

transmitted data symbol corresponding to the received data symbol has a

particular symbol value," see col. 3, line 66 ~ col.4, line 4 describing probabilities of a received

symbol y having one of a plurality of values x, i.e., the confidence factor according to "a

confidence function," i.e., a Viterbi detecting function, see col.3, line 66 ~ col.4, line 4 and

"generating a channel estimate based on the confidence factor and the

received data symbol." See col.4, lines 32-49 describing the calculation of a channel estimate

using the probabilities of a received symbol y having one of a plurality of values x.

Next, claim 9 is considered. Referring to Fig.2, Piirainen discloses a method of making a

channel estimate, comprising:

"determining a strength indicator based on a received data symbol

corresponding to a transmitted data symbol, a value of the strength indicator

indicating a likelihood that the transmitted data symbol is a particular value," see col. 3, line 66 ~

col.4, line 4 describing probabilities of a received symbol y having one of a plurality of values x,

i.e., "a strength indicator" of the received symbol, and

"generating a channel estimate based on the confidence factor and the

received data symbol." See col.4, lines 32-49 describing the calculation of a channel estimate

using the probabilities of a received symbol y having one of a plurality of values x.

Regarding claims 10 and 11, Piirainen teaches a binary modulation, one of which is the

bi-phase shift keing, where a transmitted symbol obtains the values of 1 or −1. See col. 4, lines

22-24. Thus, the strength indicator, i.e., a numeral representation of probability, approaches a

value of 1 the greater the likelihood that the transmitted data symbol was 1 and approaches a

value of -1 the greater the likelihood that the transmitted data symbol was -1.

Regarding claim 12 calling for performing the probability

determinations and the strength indicator determination according to a

predetermined function, see col.3, line 66 ~ col.4, line 4 describing computing the probabilities

according to a Viterbi detecting function.

Allowable Subject Matter

3.   Claims 4,6-8 and 13 are objected to as being dependent upon a rejected base claim, but

would be allowable if rewritten in independent form including all of the limitations of the base
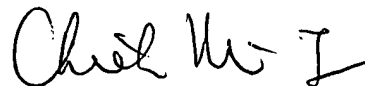
claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Y Kim whose telephone number is 571-272-3039. The examiner can normally be reached on 8AM --5PM M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 571-272-3056. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

kvk

CHIEH M. FAN
PRIMARY EXAMINER